REMARKS

Claims 1-33 and 40-47 are in the application.

Claim 33 is amended.

Claims 1-24 are allowed, and claim 41 is allowable.

Claim 33 is amended to recite a "physical" medium, and is therefore believed to be patentable. Applicant respectfully submits that this amendment is not required for patentability, and in any case, the word "tangible" also appears in the claim.

FINAL REJECTION

Claims 42-47, added in the amendment dated October 6, 2006 were not considered, and therefore the finality of the rejection should be withdrawn.

ART REJECTIONS

Claims 25-33, and 40, are rejected as being anticipated under 35 U.S.C. § 102 or obvious under 35 U.S.C. § 103 over Kolton et al. alone or in view of Tanimizu et al. (claim 40).

Applicant's undersigned attorney has carefully reviewed Kolton et al., and do not believe that significant elements of the claimed invention are disclosed therein, ands on that basis request reconsideration of the rejection. The cited text portions of Kolton et al. to support the examiner's position with respect to claim 25 are as follows:

> The invention focuses upon the interaction between a user 105 and a system of programs 100 installed on the workstation 102 which results in the user being able to develop database queries 107 using a windows interface program 104 and to view the queries in a natural English form on the screen (query feedback 109) while preparing and revising the queries using the windows interface program 104 for guidance.
>
> The windows interface program 104 provides a vehicle whereby the user may develop a query on the screen of the workstation 102. The windows interface program 104 places in front of the user 105 templates which list the alternative query 105 formulations that the user can select using a mouse pointing device and a typewriter to prepare specific queries. [The query windows, illustrated below, correspond to the language options that are set forth in a formal description of the query language that is also presented

below, and thus guide the user through all of the possible query formulations that the language is capable of achieving. As the query is developed, it is represented in a tree structure composed of the various overlapping windows that are used by the user to create the query. The query language is basically an English-like language especially tailored to be embedded within a window's prompting system. But the queries are equally capable of being represented in what appears to be normal English.] Accordingly, as the query is developed, a natural English version of the query is developed by the windows interface 104 and is passed to the display manager 106 for presentation as query feedback 109 to the user 105, so that the user can see a natural English language expression of the query or partial query that has been developed. In one embodiment, the user may enter or edit the English language query expression directly, rather than enter or edit the query using the windowing prompts. This facility enables all users to save time, and advanced users may bypass the windowing system on occasion.

The query itself is represented internally as a query representation 108 which is, in reality, a database structure that defines the overlapping set of windows which the user uses to define the query. When the user is finished defining the query and calls for the generation of reports based upon the query, the query representation 108 is compressed into a more compact, parsable form from which redundancies have been eliminated and is passed to an execution engine 110 which parses the query and calls upon a database manager 112 to extract the necessary information from a database 114; to search through the data performing the called for logical, mathematical, time range, and numeric computations; and to present the resulting information to a report manager 116 and also to a graphics manager 118 which respectively prepare reports 120 and graphs 122 for display to the user 105.

With reference to FIG. 12.2, the database 114, in the preferred embodiment of the invention, contains individual stock price information 202 concerning the price of stock on a daily (and optionally on an hourly) basis over the years. In addition, the database contains market averages information 204, such as the Dow Jones averages each day over extended periods. The database 114 also contains economic indicators information 206, such as the consumer price index, the GNP, automobile production figures, IBM's sales and profits (for example), and other such indicators, together with the dates upon which this information is released if appropriate. In addition, the database 114 contains market domain knowledge 208 relating to dates that can have an influence upon the market; such dates as holidays, special holidays, triple-witching days, and option contract expiration days, for example. Dividend distribution dates are also included. The user may also add special databases, such as bear or bull market dates, for example. Even the dates of the lunar cycles may be added to the system for use in the market studies.

The databases shown in FIG. 2 used in combination with the system 100 shown at FIG. 1 creates the potential for the user to generate reports that are of particular use to market traders and analysts in trying to examine past actions of the market at certain times, such as when dividends are paid or when special market events occur. In addition, the user may add the user's own market domain knowledge to the market domain knowledge 208 within the database 114 and thereby create a separate body of information for special reports. But to realize the potential of the database, a carefully human-engineered interface between the user 105 and the remaining parts of the system is provided in the form of the queries 107 which are implemented using overlapping windows and which are based upon an English-like search query language.

[FIGS. 3A and 3B illustrate a way that user queries are processed in two different embodiments of the invention. In FIG. 3A, the user 105 interacts directly with the windows interface 104 to create and later to modify the query. During this interaction, information from the windows interface 104 enables an echo generator 302 to construct a natural language formulation of the query (or partial query) which is displayed on a screen 306 to the user but which is not directly editable by the user.] When the query formulation process is completed, the windows data structure 304, created by the windows interface 104, is passed in a simplified form, stripped of redundancies, to an execution engine 110 which parses the data structure and then executes the database retrieval actions for and also causes the necessary reports to be generated, and formatted for printing and display. Note that report definition is inherent in the search query formulation process.

A second embodiment of the invention, illustrated in FIG. 3B, also permits the user 105 to interact with the user's windowface 104 to create a window data structure 306 that embodies the search request. The user 105 may then review and revise the query using the window interface just as in the embodiment of FIG. 3A. In addition, the echo generator 308 is designed to be bi-directional so that the window data structure 306 may be translated into an ASCII command string which is then presented to the user by a command string interface 310. The user may not only review the ASCII command string but may also edit

the command string and revise it. Then the command string interface 310 reverses the process and essentially parses the command string back into a windows data structure 306 which may then be presented to the user 105 through the windows interface 104. The user is thus given the choice of entering and revising the query either by writing and revising an ASCII command string or by working through the series of overlaying window queries and prompts. [Typically, a beginning user will stick with the windows queries and will only use the ASCII command string to make minor changes, as in the spelling of a particular stock name. Advanced users may then wish to save time by entering the query initially using the command string editing facility and possibly only use the windowing system to check out additional options that the user may have been forgotten. In either case, the final query data structure 306 is passed through a compiler 312 and is compiled into a compact tabular or tree form suitable for guiding the performance of an execution engine 110 through the tasks of retrieving the information, carrying out the relational steps called for by the search query, and generating and formatting the necessary reports.]

[b. The Window System That Interacts With The User]

[FIGS. 4A, 4B and 4C represent the windows which appear on the power-up screen of the market information machine (MIM). FIG. 4A is the query construction window. The query construction window is always located in the lower half of the MIM screen. On power-up, this window presents the user with seven query format options 402-404 to be used in the construction of queries to the market information database. Each of the seven query formats provide a unique framework to be used in the construction of a query for searching the database. The query format also defines the sequencing of the later MIM screens and the order in which the query is constructed.] This provides autosequencing which walks the user through the query construction, thereby preventing the construction of bad queries. FIG. 4A shows option 402 as being selected because it is illustrated in darker print than the latter six options 404-414. Option format 402 defines a "show attributes when conditions" query format. Option 402 is selected by placing the mouse pointer 418, shown in FIG. 4B on option format 402 with the mouse and clicking-on option 402.

Other formats are defined in option 404-414. Option format 404 is the "show count of days when conditions" query format. Option format 406 is the "show percent of days in universe when conditions" query format. Option format 408 is the "first values of attributes when conditions" query format. Option format 410 is the "show last values of attributes when conditions" query format. Option format 412 is the "show maximum values of single attributes when conditions" query format. And, option format 414 is the "show minimum values of single attributes when conditions" query format.

* * *

FIG. 28 shows the syntax for the selection of a data choice 2800 to be included in a date condition. The date may be as simple as an outright date 2802, a day of the week 2804, a month of the year 2806, a year 2808, or a particular holiday 2810. Alternatively, the date choice 2800 may be the expiration 2812 of a stock or financial instrument series addressed in the query construct, or may specify the expiration 2812 to occur in a particular month 2814. The date choice 2800 may also be any triple-witching day 2816 or else a triple-witching day 2816 in one of the four periods 2818 signified by either March, June, September or December. The date choice 2800 may be chosen to be within a number of time units 2820 or within a specific time frame, from a certain date 2820 to a certain date 2824.

Finally, the date choice 2800 may be found in a file of dates 2826. This last option gives the user the flexibility to add the effects of certain special events to the query, which might not otherwise be included in a typical analysis, because of the difficult of addressing such special events in standard database and economic analyses systems. For example, dates which are not normally available in common stock and financial instrument databases, such as the dates on which certain market-related or market-unrelated reports are released to the public, may be included in the query to observe the effect on the series or study of series to be shown. By allowing access to a file of dates, the system enables the user to customize the query to conditions very specific to the domain knowledge of the user. For example, the dates of the release of auto production figures by the government are not typically found in common financial instrument databases, and are not easily included in standard query systems, yet may show useful correlation to changes in stock prices, which correlation may be easily tested with the system of the present invention.

A file of such dates may also include numeric data related to those dates upon which the query may also perform, said numeric data being defined as a series 1206. [Thus, to use the aforementioned example, a user could add to the system the dates on which auto production figures are released, and also the figures themselves.]

FIG. 32 shows the format for a holiday 2810, which may be selected for a date choice 2800. The

ability to select holidays adds to the flexibility of the system of the present invention, as such dates may not normally be available for querying in other database systems.

Turning now to FIG. 33, the format is shown for a date 2802 for selection as a date choice 2800. The format is a standard date format wherein the numbers 3304 are separated by slashes 3302. In the case that the day, the month, or the year of the date 2802 need not be limited to any particular number, an underscore character 3300 may be selected in place of a number 3304.

FIG. 34 shows the syntax for a day of the week 2804 to be used in a date choice 2800.

While there has been described the preferred embodiment of the invention, numerous modifications and changes will occur to those skilled in the art. It is therefore intended by the appended claims to define all such modifications and changes as fall within the true spirit and scope of the invention.

1. A system for generating queries suitable for retrieving data from a database including a sequential history of commodity attributes, comprising:

a display,

a pointer device having a corresponding rendition on said display for choosing selections presented on said display,

an event definition window sequence presented on said monitor having selections responsive to said pointer, for defining an event as one or more analog indicators from market attributes comprising: market indicators, commodities, equities, transaction price, transaction volume, date, time, and the like for defining time correlated analog characteristics indicative of correlated analog characteristics indicative of a point in the sequential history when a temporal relation imposed upon selected market attributes is satisfied, and

a report definition window sequence presented on said display having selections responsive to said pointer, for defining a set of analog markets, for each point in history corresponding to the satisfaction of said one or more analog indicators as one or more time-series defining the current market being temporally related to said event to be retrieved from said database allowing comparison of report presentations for identifying recurring trends as defined by patterns relating to historical antecedents to find periods with similar characteristics.

2. A system according to claim 1, further comprising echo means connected to receive selections from said definition window sequences for echoing a near-natural language form of each portion of a search request as it is selected by the user.

Kolton et al. disclose a system, employing a graphic user interface, which permits a user to define query parameters for searching a database, and therefore apparently discloses a system which retrieves items in response to the user input. However, Kolton et al. does not teach or suggest that the graphic user interface controls an **output arrangement** of items relative to each other, in dependence on an output arrangement criterion. Kolton et al. apparently discloses that the arrangement of items is not dependent on the user input with respect to any "manipulation", but rather that merely a set of predetermined selections are available, such as "PLOT" and "PRINT". While the query itself may define the data included within an item, this is distinguished from an arrangement of the items relative to each other.

It would appear that the Examiner has adopted a claim interpretation which yields no

meaning to the word "arrangement". However, this term must be afforded meaning. This term is reasonably defined according to the context of the application and claims, i.e., "a plurality of items arranged relative to each other in dependence on the output arrangement criterion", as follows:

- an organized structure for arranging or classifying; "he changed the arrangement of the topics"; "the facts were familiar but it was in the organization of them that he was original"; "he tried to understand their system of classification"
- placement: the spatial property of the way in which something is placed; "the arrangement of the furniture"; "the placement of the chairs"

wordnet.princeton.edu/perl/webwn

Thus, the "output arrangement criterion" must define an output arrangement of items relative to each other, and not simply a set of the items without a relative arrangement which is dependent on this criterion. Thus, the "arrangement" of Fig. 9 of Kolton et al. would appear to be predetermined, and therefore not dependent on this criterion.

Therefore, claim 25 is believed distinguished. Claims 26-33 are believed patentable for at least the same reasons as claim 25.

With respect to claim 26, it is respectfully submitted that Fig. 4 and descriptive text do not teach or suggest that the "options" are output arrangements—in fact, these are expressly described on Col. 6, line 20, as "query formats"; that is, they define the query, the "input" and not a separate control over arrangement of items, an "output". It is also respectfully submitted that the "scale" defined by claim 26 is absent from Kolton.

It is likewise believed that the "sort criterion" of claim 29, and "ranking criterion" of claim 30, are absent from Kolton et al.

It is respectfully submitted that the "links" between data records are neither taught nor

suggested by the Kolton et al. reference.

Applicant has previously indicated that Kolton et al. provide a GUI interface system in which parameters are entered by keyboard to define quantitative inputs, but only binary options or item selections are made through the graphic user interface pointing device (mouse). "Day of week option 504 uses the day field 524 to select a particular day of the week by clicking on the field 524 with the mouse and then typing the day of the week." Col. 6, lines 65-67. Thus, while the field on the window is itself selected by a mouse, Col. 6, lines 6-8, 39-40, 65-67, Col. 7, lines 21-30; Col. 8, lines 32-35, 51-53, 60-65; and Col. 9, lines 3-5, the quantitative input is not. Therefore, Kolton et al. does not teach or suggest the graphic manipulation of the graphic representation of an output criterion. Therefore, the arrowheads in Figs. 4-8 appear to have different functions that those in Applicant's Fig. 8, for example.

Claim 40 is rejected under 35 U.S.C. § 103 as being obvious over Kolton et al. in view of Tanimizu et al. Tanimizu et al. provides an image matching system in which the registration of images is determined. Therefore, a parameter is generated which indicates a shift of the images. This, however, is quite distinct from a user input for a graphic user interface. The "gradation value" Col. 3, line 54) of Tanimizu is in fact the luminosity of an image pixel and has nothing to do with a user interface input. Tanimizu et al. does not disclose how a user might input a "gradation" through a graphic user interface.

Because claims 42-47 are not examined, it is respectfully submitted that the Final rejection is premature, and withdrawal thereof and consideration of all of the pending claims is respectfully solicited.

It is respectfully submitted that the application is now in form for allowance.

Respectfully Submitted,

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